

Speed Measurement and Switching Instruments



Fast measurement and protection where it counts

Features

- Converts absolute speed or acceleration into an analogue signal
- Up to 4 set points in one instrument with programmable hysteresis
- None, 2 or 4 changeover relays as signed to speed or acceleration limits
- Accuracy Class 0.2%
- Period Measurement Principle
- Configuration and status via Windows software or front panel keys & display
- 5 digit machine factor allowing configuration and display in machine units
- Built in sensor supply
- Programmable trigger level
- Wide tolerance AC & DC power options
- Password protection of configuration parameters

The FT1400 Advantage

- Fast response to over speed conditions
- Germanischer Lloyd's approval for marine applications
- Local digital indication of measured values and configuration parameters
- 0/4...20mA or 0/1...5mA or 0/2...10V analogue output with rising or falling characteristic
- Adaptive trigger option for use with electromagnetic sensors
- 2 possible relay configuration sets e.g. for start up bridging, controlled via binary inputs
- Relay control from absolute limits or a 'window' function
- Programmable measurement & analogue output filter times
- Integrated 2 or 3 wire sensor monitoring and system watchdog

Typical Applications

- Diesel engine start control and over speed protection
- Turbine protection using the acceleration feature allowing efficient operation
- Turbocharger speed measurement
- Machine protection in safety critical applications

IN CHARGE OF SPEED

The FT 1400 family comprises of:

Frequency to current converter:

FTW 1413...

Combined converter & frequency relay:

FTFW 1422 ... with 2 set points & 2 relays

FTFW 1424 ... with 4 set points & 4 relays

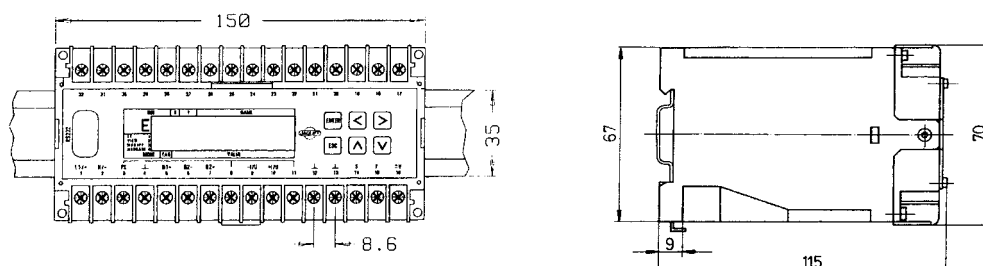
For the full options list, please see the ordering key.



Technical Data

Measuring range	Lowest: 0...0.9990 Hz	Highest: 0... 50.00 kHz
Accuracy	0.2% referred to 20mA or full scale value	
Analogue output	0/4... 20mA, optionally 0/2... 10V or 0/1...5mA Programmable rising or falling characteristic Load: max 500 Ohms with 20mA output (2k for 5mA), Min. 7 kOhms with voltage output. Maximum load voltage: 10V Maximum open circuit voltage: 20 V Resolution: 12 bit corresponding to 1:4096. Maximum linearity error: 0.1 %	
Set points	Range: see above Hysteresis: individually programmable High switching and Low reset values for each limit Change over contact: one for each limit, potential free, selectable normal/inverse mode, max 250V, 1A, 50W	
Data I/O	Serial RS 232 interface, 9 pole sub D plug. Used with Jaquet FT1400 Windows software that is supplied with each unit	
Measuring / response time	The min. measuring time (Fix-Time) is programmable: 5/10/20/50/100/200/500 ms, 1/2/5 s The response time to a step change is typically Fix-Time + 1 signal period + 7.5 ms	
Micro terminal	2 line LCD Display, 6 keys for the input of parameters in a matrix table	
Sensor input	Input voltage: 50 mV . . .80 Vrms Frequency range: (-3 dB): 0.02 Hz ... 50 kHz Input impedance: 100 kOhms, potential free; selectable for passive or active sensors, programmable trigger level between 0...+3.5 V.	
Sensor supply	Programmable + 5...12 V, 70 mA max, selectable pull-up / pull-down resistance of 820 Ohms for two wire sensors.	
Sensor monitoring	For 2 and 3 wire sensors. Low and High current consumption values are selectable in the range 0.5... 70mA. Sensors with consumption below I min. or above I max. will be signalled as defective. Sensor fault may be assigned to a relay.	
Binary inputs	For switching between two configuration sets e.g. for start up bridging. Binary input 1: TTL level (+5 V): active low, not isolated from the frequency input. Binary input 2: Isolated. Logic 0 = 0...+5 V, logic 1 = 15...+33 V, max. 4 mA.	
Environmental	Operating temperature: 0...+55 C Storage temperature: -25...+65 C Relative humidity 75% average over year, up to 95% for 30 days max.	

Dimensions:



Ordering information

Frequency to current converter	FTW 1413	
Combined converter and speed switch	FTFW 1422	2 limit values/ relays
Combined converter and speed switch	FTFW 1424	4 limit values / relays

Options

UC2:	93...264Vac / 90...375Vdc
UC3:	18...58Vac / 18...60Vdc
U:	Analogue output= 0/2...10V
S3:	Analogue output= 0/1...5mA
S11:	Adaptive trigger
S32:	Acceleration option

Rail	Rail DIN 4622713 (EN 50022) or mounting plate to DIN 43660 (46121)
Housing:	Protection class IP50
Terminals:	Protection class IP20
Weight:	approx. 550g

Full technical details can be seen in the detailed specification.

All FT 1400's are supplied with a 3.5" disk providing full documentation and the FT 1400 Windows Software.

The Software allows:

- Quick and easy configuration of all operating parameters
- Unit interrogation of identity and parameters
- PC display of current measurement and relay status
- Archiving and printing of the configuration



JAQUET TECHNOLOGY GROUP is your speed sensing specialist. We offer high quality, technically advanced speed sensing solutions that boost and protect the high performance and efficiency of our customers' specific applications in wide variety of industries.

JAQUET Mission Statement

To design, manufacture, market and service both standard and customised products that detect, measure, control and interpret SPEED under any circumstances.

To create a competitive edge to our customers' applications, and secure high quality and reliability standards.

To foster long term OEM and end user customer satisfaction by keeping a finger on the pulse of market trends.

To be dedicated to excellence and continuously developing new innovative solutions

JAQUET Product Lines

- Speed sensors – standard – custom - intelligent
- Over / under speed protection systems and instruments
- Tachometers / speed measurement and switching instruments
- Application specific, complete speed sensing, measurement & diagnostic systems.

JAQUET Markets

Our solutions are typically used in

- automotive,
- diesel and gas engines
- energy / power
- turbines & compressors
- hydraulics
- railway
- marine
- industrial machinery markets.

JAQUET Quality Management

- ISO 9001
- QS 9000

JAQUET Worldwide

JAQUET is headquartered in Basel, Switzerland and has 5 subsidiaries (Belgium, Germany, Netherlands, United Kingdom, United States) along with a worldwide distributor and end-user service network.

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JAQUET TECHNOLOGY GROUP • Thannerstrasse 15 • 4009 Basel • Switzerland
Tel: +41 61 306 8822 • Fax +41 61 306 8818 • info@jaquet.com • www.jaquet.com